

CLAIMS

1. A method for identifying a substance which modulates the activity of a *pknB* protein kinase, comprising:

- 5 contacting a recombinant bacterial cell with the substance, wherein the recombinant bacterial cell expresses the *pknB* protein kinase, and wherein the *pknB* protein kinase comprises the amino acid sequence of SEQ ID NO: 3 or an amino acid sequence that is at least 70% identical to SEQ ID NO: 3 and has protein kinase activity; measuring the *pknB* protein kinase activity from said bacterial cell; and
- 10 comparing the *pknB* protein kinase activity from the recombinant bacterial cell contacted with the substance to a bacterial cell which has not been contacted with the substance, wherein a change in protein kinase activity from the recombinant bacterial cell contacted with the substance relative to a bacterial cell which has not been contacted with the substance indicates that the substance modulates the activity of *pknB* protein kinase.
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2. The method of Claim 1, wherein the *pknB* protein kinase comprises the amino acid sequence of SEQ ID NO: 3.

3. The method of Claim 1, wherein the *pknB* protein kinase comprises an amino acid sequence that is at least 70% identical to SEQ ID NO: 3 and has protein kinase activity.
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4. The method of Claim 3, wherein the *pknB* comprises an amino acid sequence that is at least 80% identical to SEQ ID NO: 3 and has protein kinase activity.

5. The method of Claim 3, wherein the *pknB* comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 3 and has protein kinase activity.

- 25 6. A method for identifying a substance which modulates the activity of a *pstp2* phosphatase, comprising:

contacting a recombinant bacterial cell with the substance, wherein the recombinant bacterial cell expresses the *pstp2* phosphatase, and wherein the *pstp2* phosphatase comprises the amino acid sequence of SEQ ID NO: 1 or an amino acid sequence that is at least 70% identical to SEQ ID NO: 1 and has phosphatase activity;

30 measuring the *pstp2* phosphatase activity from the recombinant bacterial cell; and

comparing the pstp2 phosphatase activity from the recombinant bacterial cell contacted with the substance to a bacterial cell which has not been contacted with the substance, wherein a change in phosphatase activity from the recombinant bacterial cell contacted with the substance relative to a bacterial cell which has not been contacted
5 with the substance indicates that the substance modulates the activity of pstp2 phosphatase.

7. The method of Claim 6, wherein the pstp2 phosphatase comprises the amino acid sequence of SEQ ID NO: 1.

8. The method of Claim 6, wherein the pstp2 phosphatase comprises an amino
10 acid sequence that is at least 70% identical to SEQ ID NO: 1 and has phosphatase activity.

9. The method of Claim 6, wherein the pstp2 phosphatase comprises an amino acid sequence that is at least 80% identical to SEQ ID NO: 1 and has phosphatase activity.

10. The method of Claim 6, wherein the pknB comprises an amino acid
15 sequence that is at least 90% identical to SEQ ID NO:1 and has phosphatase activity.

11. A method of identifying an antibacterial substance, comprising:

identifying a substance according to Claims 1 to 5;

contacting a bacterial cell with the substance; and

20 comparing the growth, the survival or both of the bacterial cell contacted with the substance to a bacterial cell that has not been contacted with the substance, wherein a reduction in the growth, survival or both of the bacterial cell is indicative that the substance is an antibacterial substance.

12. A method of identifying an antibacterial substance, comprising:

25 identifying a substance according to Claims 6 to 10; and

contacting a bacterial cell with the substance;

30 comparing the growth, the survival or both of the bacterial cell contacted with the substance to a bacterial cell that has not been contacted with the substance, wherein a reduction in the growth, survival or both of the bacterial cell is indicative that the substance is an antibacterial substance.

13. A method for the preparation of a substance having antimicrobial activity, comprising:

identifying a substance according to Claims 1 to 5; and
synthesizing the substance.

14. A method for the preparation of a substance having antimicrobial activity,
comprising:

- 5 identifying a substance according to Claims 6 to 10; and
 synthesizing the substance.